Attorney's Docket No.:	219.37082X00 (ATSK)			<u>PATENT</u>
		TTORNEY FOR PATENT APPLITONS)	CATION	4
As a below named invent	or, I hereby declare that:			
My residence, post office	address and citizenship are as	stated below, next to my name.		
inventor (if plural names on the invention entitled	are listed below) of the subjec	nly one name is listed below) or an t matter which is claimed and for v	which a p	patent is sought
the specification of which				
	ned hereto.			
X was file	d on December 30, 1999 as			•
	United States Application No	umber <u>09/475,029</u>		
	and was amended on	ation Number		
	and was amended on	(if applicable)		
		(ii applicable)		
claim(s), as amended by an was ever known or used in printed publication in any same was not in public use that the invention has not application in any country	ny amendment referred to above in the United States of America country before my invention the e or on sale in the United States been patented or made the sul- ry foreign to the United States more than twelve months (for a	contents of the above-identified space. I do not know and do not believe a before my invention thereof, or pathereof or more than one year prior to sof America more than one year prior to ject of an inventor's certificate issues of America on an application a utility patent application) or six manufactured.	that the contented or or this apprior to this ued before filed by	claimed invention described in any plication, that the application, and the the date of this me or my legal
I acknowledge the duty to Code of Federal Regulation	disclose all information know ons, Section 1.56.	n to me to be material to patentabi	lity as de	fined in Title 37,
application(s) for patent of	or inventor's certificate listed b	35, United States Code, Section 1 pelow and have also identified below efore that of the application on which	w any for ich priori	reign application ity is claimed:
Prior Foreign Application	<u>(s)</u>		Prio <u>Clai</u>	•
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

INTEL CORPORATION Rev. 08/05/98 (D3 INTEL)

(Number)

(Day/Month/Year Filed)

Yes No

(Country)

I hereby claim the benefit under application(s) listed below	title 35, United States Coo	le, Section 119(e) of any United States provisiona
(Application Number)	Filing Date	
(Application Number)	Filing Date	
below and, insofar as the subject m States application in the manner p acknowledge the duty to disclose a	natter of each of the claims of provided by the first paragrall information known to me on 1.56 which became available.	Section 120 of any United States application(s) listed of this application is not disclosed in the prior United raph of Title 35, United States Code, Section 112, it to be material to patentability as defined in Title 37 able between the filing date of the prior application and in:
(Application Number)	Filing Date	(Status patented, pending, abandoned)
(Application Number)	Filing Date	(Status patented, pending, abandoned)

I hereby appoint: Donald R. Antonelli, Reg. No. 20,296; David T. Terry, Reg. No. 20,178; Melvin Kraus, Reg. No. 22,466; William I. Solomon, Reg. No. 28,565; Gregory E. Montone, Reg. No. 28,141; Ronald J. Shore, Reg. No. 28,577; Donald E. Stout, Reg. No. 26,422; Alan E. Schiavelli, Reg. No. 32,087; James N. Dresser, Reg. No. 22,973; Carl I. Brundidge, Reg. No. 29,621; Paul J. Skwierawski, Reg. No. 32,173, my attorneys; of ANTONELLI, TERRY, STOUT & KRAUS, LLP with offices located at 1300 North Seventeenth Street, Suite 1800, Arlington, Virginia 22209, telephone: (703) 312-6600, fax: (703) 312-6666; and Alan K. Aldous, Reg. No. 31,905; Robert D. Anderson, Reg. No. 33,826; Joseph R. Bond, Reg. No. 36,458; R. Edward Brake, Reg. No. 37,784; Richard C. Calderwood, Reg. No. 35,468; Jeffrey S. Draeger, Reg. No. 41,000; Cynthia Thomas Faatz, Reg No. 39,973; Sean Fitzgerald, Reg. No. 32,027; Seth Z. Kalson, Reg. No. 40,670; David J. Kaplan, Reg. No. 41,105; Leo V. Novakoski, Reg. No. 37,198; Naomi Obinata, Reg. No. 39,320; Thomas C. Reynolds, Reg. No. 32,488; Steven P. Skabrat, Reg. No. 36,279; Howard A. Skaist, Reg. No. 39,435; my patent attorneys, and Calvin E. Wells, Reg. No. P43,256; and Alexander Ulysses Witkowski, Reg. No. P43,280; my patent agents, of INTEL CORPORATION; with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send all correspondence to:

ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 North Seventeenth Street Suite 1800 Arlington, VA. 22209

Direct all telephone calls and faxes to:

TEL: (703) 312-6600 FAX: (703) 312-6666

INTEL CORPORATION Rev. 08/05/98 (D3 INTEL) I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole/Fir	st Inventor Amit A. MERCHAN	<u>rr </u>	
Inventor's Signature _	Alerchant	Date	4/19/00
Residence Same as Po		Citizenship India	
Post Office Address	(City, State) 5468 N.W. Deerfield Way, Port	land, OR 97229	(Country)
Full Name of Second/	Joint Inventor Darrell D. BOGG	S	
Inventor's Signature _	dans Ofm	Date 4	129/00
Residence Same as Po	st Office Address	Citizenship <u>U.S.A.</u>	
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Full Name of Third/Jo	int Inventor David J. SAGER		
Inventor's Signature _	Davil Sage	Date	25/00
Residence Same as Po		Citizenship <u>U.S.A.</u>	•
Post Office Address	(City, State) 9540 N.W. Skyview Drive, Por		(Country)
	·	dima, 014, 77231	
Full Name of Fourth/J	oint Inventor		
Inventor's Signature _		Date	
Residence		Citizenship	
Post Office Address	(City, State)		(Country)

Full Name of Fifth/Joint	Inventor		
Inventor's Signature		Date	
Residence		Citizenship	
Post Office Address	(City, State)		(Country)
Full Name of Sixth/Join	t Inventor		
Inventor's Signature		Date	
Dead Office Address	(City, State)	Citizenship	(Country)
		Data	
		Date	
n . om . 111	(City, State)	Citizenship	(Country)
Full Name of Eight/Join	t Inventor		
Inventor's Signature		Date	
Residence		Citizenship	
Post Office Address _	(City, State)		(Country)
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Title 37, Code of Federal Regulations, Section 1.56 Duty to Disclose Information Material to Patentability

- (a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclosure all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by patentability of any existing of the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:
 - (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
- (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
 - (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
- (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.

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Application Number	09/475,029				
Filing Date	December 30, 1999				
First Named Inventor	Amit A. MERCHANT et al.				
Art Unit	2759				
Examiner Name	To be assigned				
Attorney Docket Number	02207/5602				

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Address		1500 K Street, N.W.						
City		Washington	State	DC		ZIP	20005	
Country		USA		<u></u>			20000	
Telephone		(202) 220-4255	Fax	(202)	220-4201			
I am the:				<u> </u>				
☐ Applicant/I	/Invento	ir.						
Assignee of	of recor	rd of the entire interest. See 37 CFR 3.	3.71.					
Certificate under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).								
		SIGNATURE of Applica	ant or As	ssianee	of Reco	·rd		
The unde	Jersigne	ed (whose title is supplied below) is emp	powered	to sign	this state	ement on t	behalf of the ass	sianee.
Name Pa	am Matic	ock	Titl			ry of Pater		19
Signature	Zan	n Martock						
Date	rus	12 2003		Teler	phone	408/765-	·1144	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.								
		forms are submitted.	, see be	:low⁼.				<u> </u>

This collection of information is required by 37 CFR 1.31 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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STATEMENT UNDER	<u>R 37 CFR 3.73(b)</u>
Applicant/Patent Owner: Intel Corporation	
	ed/Issue Date: December 30, 1999
Entitled: INTERFACE TO A MEMORY SYSTEM FOR A PROC	ESSOR HAVING A REPLAY SYSTEM
(Name of Assignee) (Type of Assigne	nee, e.g., corporation, partnership, university, government agency, etc.)
states that it is:	
1. X the assignee of the entire right, title, and interest; o	or '
2. an assignee of less than the entire right, title, and it	interest
The extent (by percentage) of its ownership inte	erest is %
in the patent application/patent identified above by virtue of either	er:
A. An assignment from the inventor(s) of the patent application recorded in the Patent and Trademark Office at Reel 0107 attached.	ion/patent identified above. The assignment was 753, Frame 0141, or for which a copy thereof is
OR	
B. A chain of title from the inventor(s), of the patent application shown below:	ion/patent identified above, to the current assignee as
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Reel, Frame, or for which a copy there	of is attached.
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Reel, Frame, or for which a copy there	of is attached.
3. From: To:	
The document was recorded in the United States Pa	
Reel, Frame, or for which a copy there	of is attached.
Additional documents in the chain of title are listed or	n a supplemental sheet.
Copies of assignments or other documents in the chain of tit [NOTE: A separate copy (i.e., the original assignment documents be submitted to Assignment Division in accordance with recorded in the records of the USPTO. See MPEP 302.8]	nent or a true copy of the original document)
The undersigned (whose title is supplied below) is empowered to	.o sign this statement on behalf of the assignee.
allyest 12, 2003	Pam Matlock Signature
(408) 765-1144	Pam Matlock
Telephone Number	Typed or printed name
	Secretary of Patents
	Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Docket No.: 219.37082X00 FORM PTO-1595 U.S. DEPARTMENT OF RECORDATION FORM COVER SHEET 1-31-92 COMMERCE Patent and Trademark Office PATENTS ONLY To the Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof. 1. Name of conveying party(ies): 2. Name and address of receiving party(ies): Amit A. MERCHANT, Darrell D. BOGGS, David J. SAGER Name: INTEL CORP. Internal Address: Additional name(s) of conveying party(ies) attached? Yes No 3. Nature of conveyance: Street Address: 2200 Mission College Blvd. SC4-202, Assignment City: Santa Clara State: California Country: U.S.A. ☐ Security Agreement ☐ Change of Name Zip: 95052 Other Additional name(s) & address(es) attached? Yes No Execution Date: 4/19/00, 4/24/00, 4/25/00 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is: A. Patent Application No.(s) B. Patent No.(s) 09/475,029 Additional numbers attached? Yes No 5. Name and address of party to whom correspondence 6. Total number of applications and patents involved: 1 concerning document should be mailed: Name: ANTONELLI, TERRY, STOUT & KRAUS, LLP 7. Total fee (37 CFR 3.41) X Enclosed Internal Address: Any deficiencies may be charged to deposit account Authorized to be charged to deposit account Street Address: 1300 North Seventeenth Street 8. Deposit account number: 01-2135 **Suite 1800**

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9. Statement and signature.

City: Arlington,

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Paul J. Skwierawski
Name of Person Signing

Signature

Zip: 22209

May 1, 2000

Date

Attorney Registration No. 32,173

State: Virginia

Total number of pages including cover sheet, attachments, and document: 3

(Attach duplicate copy of this page if paying by deposit account)

i: <u>3</u>

OMB No. 0651-0011 (exp. 4/94)

Intel Ref: P5602

Attorney's Docket No.: 219.37082X00 (ATSK)

PATENT

ASSIGNMENT

(For Execution Prior To Filing Patent Application)

In consideration of good and valuable consideration, the receipt of which is hereby acknowledged, Amit A. MERCHANT, Darrel D. BOGGS and David J. SAGER, the undersigned, 5468 N.W. Deerfield Way, Portland, OR 97229, 2200 S.W. 195th Avenue, Aloha, OR, 97006, 9540 N.W. Skyview Drive, Portland, OR, 97231, hereby sell, assign, and transfer to Intel Corporation a corporation of Delaware , having a principal place of business at <u>2200 Mission College Boulevard</u>, SC4-202 Santa Clara, CA 95052, ("Assignee"), and its successors, assigns, and legal representatives, the entire right, title, and interest for the United States and all foreign countries, in and to any and all improvements that are disclosed in the application for the United States patent that has been executed by the undersigned prior hereto or concurrently herewith on the dates indicated below and is entitled INTERFACE TO A MEMORY SYSTEM FOR A PROCESSOR HAVING A REPLAY SYSTEM and in and to said application and all divisional applications, continuation applications, continued prosecution applications. continuation-in-part applications, substitute applications, renewal applications, reissue applications. reexaminations, extensions, and all other patent applications that have been or shall be filed in the United States and all foreign countries on any of said improvements; and in and to all original patents, reissued patents, reexamination certificates, and extensions, that have been or shall be issued in the United States and all foreign countries on said improvements; and in and to all rights of priority resulting from the filing of said United States application;

agree that said Assignee may apply for and receive a patent or patents for said improvements in its own name; and that, when requested, without charge to, but at the expense of, said Assignee, its successors, assigns, and legal representatives, to carry out in good faith the intent and purpose of this Assignment, the undersigned will execute all divisional applications, continuation applications, continued prosecution applications, continuation-in-part applications, substitute applications, renewal applications, reissue applications, reexaminations, extensions and all other patent applications on any and all said improvements; execute all rightful oaths, assignments, powers of attorney, and other papers; communicate to said Assignee, its successors, assigns, and representatives all facts known to the undersigned relating to said improvements and the history thereof; and generally assist said Assignee, its successors, assigns, or representatives in securing and maintaining proper patent protection for said improvements and for vesting title to said improvements, and all applications for patents and all patents on said improvements, in said Assignee, its successors, assigns, and legal representatives; and

covenant with said Assignee, its successors, assigns, and legal representatives that no assignment, grant, mortgage, license, or other agreement affecting the rights and property herein conveyed has been made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned.

Each Inventor: Please Sig	gn <u>and Date</u> Below:	Each Inventor: Please also list the date that you signed the accompanying DECLARATION AND POWER OF ATTORNEY:
4/19/, 200 <u>0</u> Date	Amit A. MERCHANT Name: Alcrehant Darrell D. BOGGS Name: Janual Ham	<u>4/19/</u> , 200 <u>0</u> Date
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the undersigned Notary Public	200, before me, c, personally appeared te [] proved to me on the basis of satisfact ascribed to the within instrument, and acknowled it.	tory evidence to be the person(s)
WITNESS my hand and offic		
Notary's Signature		